

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A semiconductor device having a MOSFET, the MOSFET

comprising:

source and drain regions formed in a major surface region of a

semiconductor substrate;

a gate insulating film formed on a channel region between the source and

drain regions;

a gate electrode which is formed on the gate insulating film and formed of

a poly-Si_{1-x}Ge_x layer having a Ge/(Si+Ge) composition ratio

x (~~$0 < x < 0.2$~~) ($0.04 < x < 0.16$);

a first metal silicide film which is formed on the gate electrode and

essentially consists of NiSi_{1-y}Ge_y; and

second and third metal silicide films which are formed on the source and

drain regions, respectively, and essentially consist of NiSi.

2. (Canceled)

3. (Canceled)

4. (Currently Amended) The device according to claim [[3]] 15, wherein the first to third

metal plugs essentially consist of tungsten, and the first to third barrier metal

layers contain TiN.

5. (Original) The device according to claim 1, wherein a thickness of the poly-Si_{1-x}Ge_x layer in the gate electrode is at least twice that of the first metal silicide film.

6. (Currently Amended) The device according to claim 1, which further comprises:
a well region ~~which is~~ formed in the semiconductor substrate~~[[,]]~~; and ~~in~~
~~which the~~
source and drain regions ~~are~~ formed in the well region, the source and
drain regions including first and second heavily doped impurity
diffusion regions and third and fourth lightly doped impurity diffusion
regions, the third and fourth lightly doped impurity diffusion regions
being source and drain extensions respectively;
wherein the third and fourth diffusion lightly doped impurity regions are
formed near the channel region and in the first and second heavily
doped impurity diffusion regions, respectively.
~~the source and drain regions have structures with source and drain~~
~~extensions, and first and second heavily doped impurity diffusion~~
~~regions and third and fourth lightly doped impurity diffusion regions~~
~~formed near the channel region in the first and second impurity~~
~~diffusion regions.~~

7. (Withdrawn) A method of manufacturing a semiconductor device, comprising:
forming a gate insulating film on a semiconductor substrate;

forming a gate electrode including a poly-Si_{1-x}Ge_x layer which has a Ge/(Si+Ge) composition ratio x ($0 < x < 0.2$) on the gate insulating film;
doping an impurity into a major surface region of the semiconductor substrate to form source and drain regions;
forming an Ni film on the gate electrode and the source and drain regions;
and
performing annealing to change the Ni film on the gate electrode into an NiSi_{1-y}Ge_y film and the Ni films on the source and drain regions into NiSi films.

8. (Withdrawn) The method according to claim 7, wherein the Ge/(Si+Ge) composition ratio more preferably falls within a range of $0.04 < x < 0.16$.

9. (Withdrawn) The method according to claim 7, further comprising
forming an interlayer dielectric film on the NiSi_{1-y}Ge_y and NiSi films and
forming first to third contact holes in the interlayer dielectric film at positions corresponding to the gate electrode and source and drain regions,
forming first to third barrier metal layers in the first to third contact holes,
and
burying first to third metal plugs on the first to third barrier metal layers in the first to third contact holes.

10. (Withdrawn) The method according to claim 7, further comprising, before formation of the gate insulating film,
forming an element isolation structure on the major surface of the semiconductor substrate, and
forming a well region in an active element region defined by the element isolation structure.
11. (Withdrawn) The method according to claim 7, wherein formation of the source and drain regions includes
ion-implanting an impurity into the major surface region of the semiconductor substrate using the gate electrode as a mask to form first and second lightly doped impurity diffusion regions,
forming sidewall insulating films on sidewall portions of the gate electrode, and
ion-implanting an impurity into the major surface region of the semiconductor substrate using the gate electrode and the sidewall insulating films as a mask to form third and fourth heavily doped impurity diffusion regions.
12. (Withdrawn) The method according to claim 9, wherein formation of the interlayer dielectric film includes
depositing a silicon nitride film on the major surface of the semiconductor

substrate and upper and side surfaces of the gate electrode, and
depositing a silicon oxide film on the silicon nitride film.

13. (Withdrawn) The method according to claim 9, wherein formation of the first to third barrier metal layers includes

forming a Ti film on the interlayer dielectric film and in the first to third
contact holes, and

nitriding the Ti film to convert at least part of the Ti film into a TiN film.

14. (Withdrawn) The method according to claim 9, wherein burying of the first and third metal plugs includes

forming a tungsten layer on the lightly doped impurity diffusion regions and
in the first to third contact holes by CVD, and

executing CMP to planarize the surface and leaving the tungsten layer in
the first to third contact holes to form the first to third metal plugs.

15. (New) The device according to claim 1, further comprising:

an interlayer dielectric film which is formed on the MOSFET;

a first metal plug formed in the interlayer dielectric film and in a first

contact hole on the gate electrode, and a first barrier metal layer

inserted between the first metal plug and the first metal silicide film;

a second metal plug formed in the interlayer dielectric film and on the source region, and a second barrier metal layer inserted between the second metal plug and the second metal silicide film;

a third metal plug formed in the interlayer dielectric film and on the drain region, and a third barrier metal layer inserted between the third metal plug and the third metal silicide film.